

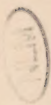
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Cuba
With regards of
V. Havard

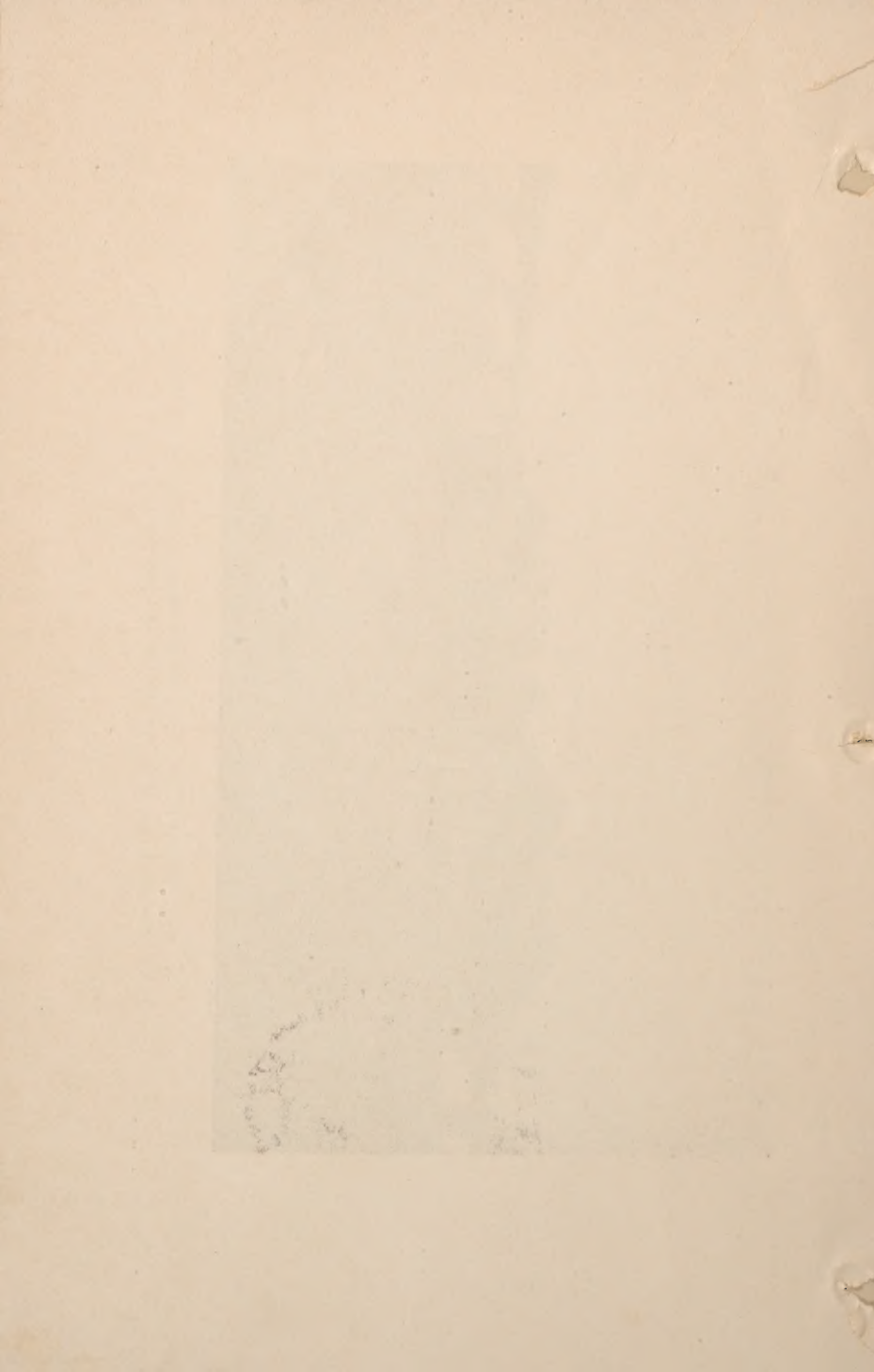
REPORT
OF
MAJOR VALERY HAVARD,
SURGEON U. S. ARMY,
CHIEF SURGEON
DEPARTMENT OF CUBA.

1901.



POST HOSPITAL, U. S. A., HAMILTON BARRACKS (MATANZAS).
Taken from rear, showing both wards and administration building in front.





HEADQUARTERS DEPARTMENT OF CUBA,
OFFICE OF CHIEF SURGEON,

Havana, July 22, 1901.

To the

*Adjutant General,
Department of Cuba,
Havana, Cuba.*

SIR:

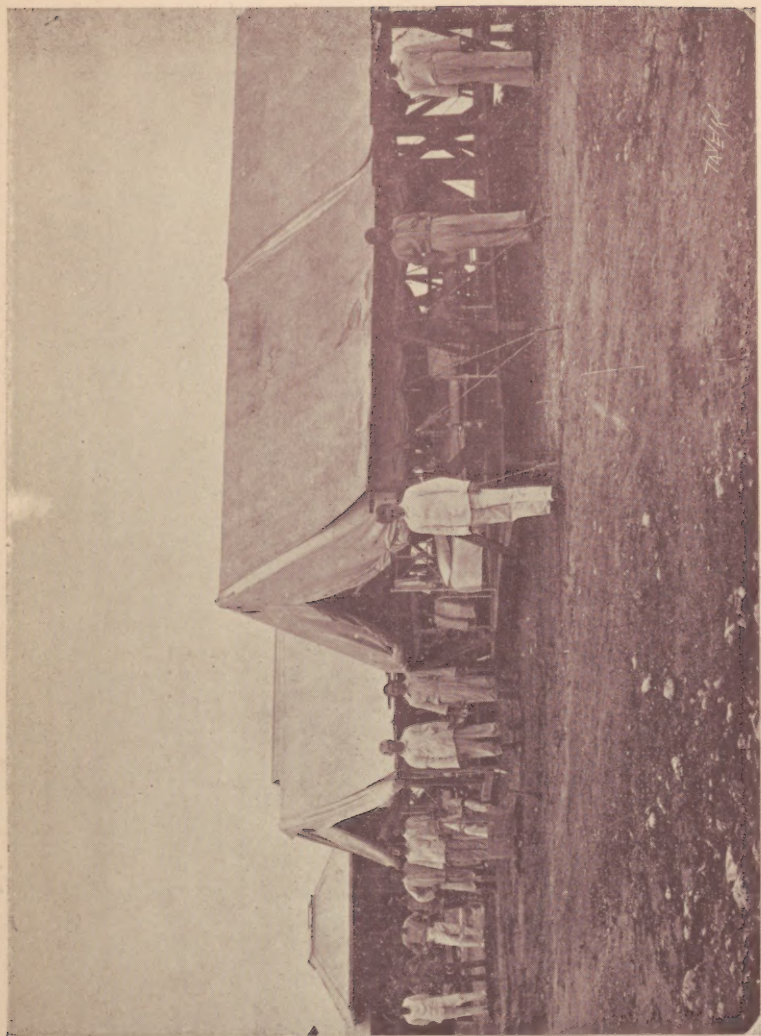
I have the honor to submit the following report of the operations of this office for the fiscal year ending June 30, 1901.

The health of the troops in Cuba during the year has been very good, showing a marked and steady improvement upon former years. Thus, while during the year ending June 30, 1900, the admissions to the sick report were 322 per cent., with 1.51 per cent. of deaths, the admissions during the past year are only 193 per cent., with 1.25 per cent. of deaths. Comparing the results obtained in the appended table for the island of Cuba with the statistics in the last report of the Surgeon General (calendar year 1899), we find that our ratio of admissions is less than that for all troops outside the United States (252) but more than that for troops stationed in the United States (168). In like manner, our ratio of deaths is less than that for all islands (2.55) but more than that for the United States (0.79). Our mortality was largely increased by outbreaks of yellow fever, a disease not likely again to occur among troops in Cuba, except possibly in a scattering, sporadic manner; if we deduct the number of yellow fever cases from the total mortality, we obtain a percentage of 0.80, practically that of the United States.

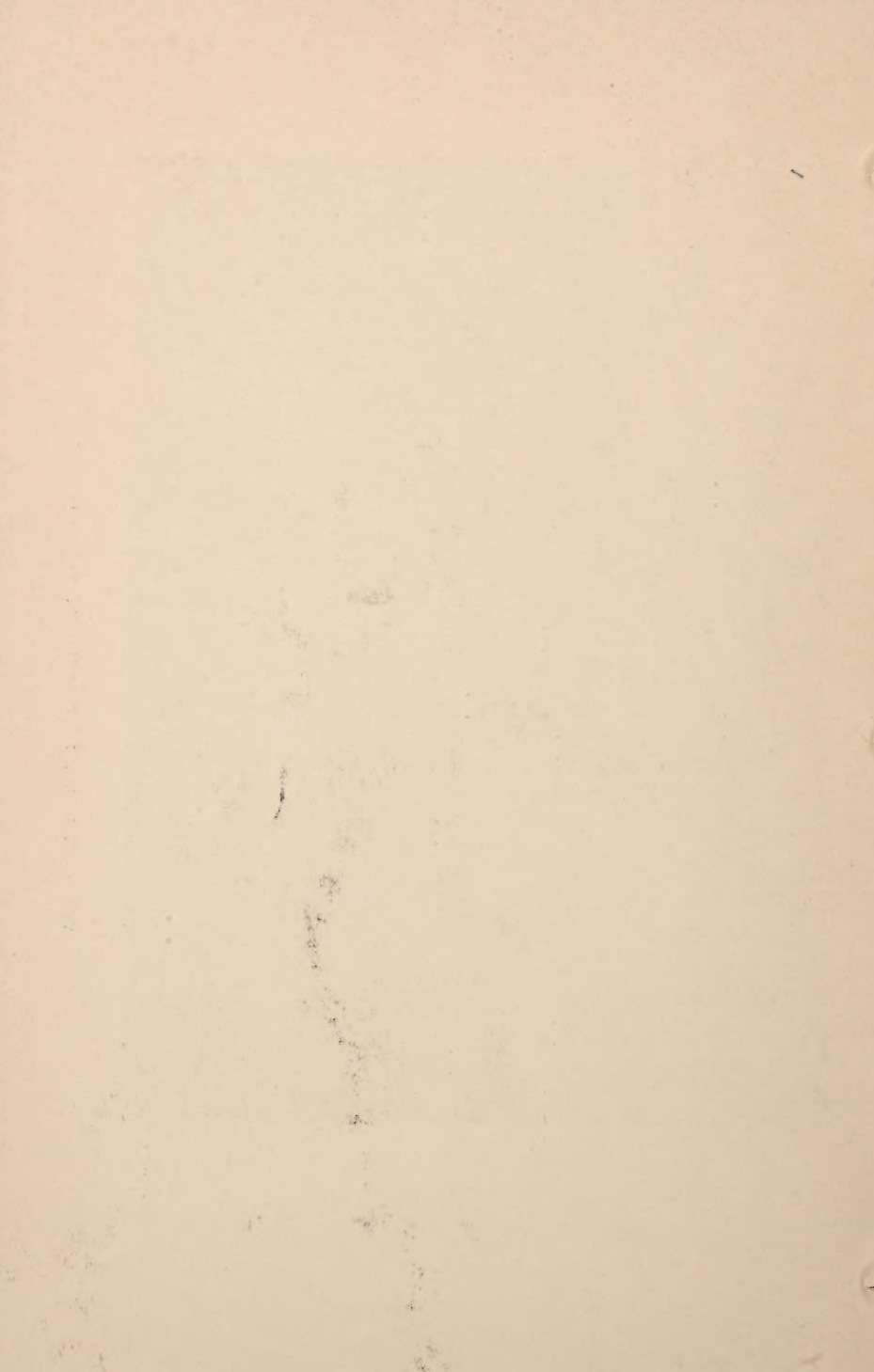
Further comparison furnishes instructive details. In Cuba, the ratio of admissions for diarrhoeal diseases,

dysentery, malarial fevers and yellow fever, as should be expected, is higher than in the United States, but that of the common infectious diseases, such as scarlet fever, measles, small-pox, influenza, mumps, diphtheria, is very much lower, the majority of cases under the heading of "other infectious diseases" in our tables being vaccinia, that is, the condition produced by vaccination. There was not a single case of small-pox during the year. The ratio of typhoid fever is about one-third that of the United States, and much greater in western Cuba, where are the large seaport towns, than in the eastern part of the island. Strangely enough, tuberculosis among our troops is more common in Cuba than in the United States, as 0.44 to 0.32, and about the same as in all the islands (0.45), which is remarkable in view of the fact that other diseases of the respiratory system, such as bronchitis and pneumonia, are almost unknown. This relative frequency of tuberculosis among soldiers in Cuba, and its great prevalence among civilians, would tend to show that a rather high and equable temperature all the year round is not by itself a factor of great importance in the prevention and cure of that disease.

Our record for syphilis and other venereal diseases is bad, being nearly double that of the United States, and apparently also worse than that for all the islands. This evil has always been one of the troublesome problems to confront post surgeons in Cuba and there is no satisfactory solution in sight. About one-eighth of soldiers on the sick report are victims of it. Were it possible to examine all prostitutes and subject them to treatment when necessary, these diseases would be much less prevalent; but in several garrison towns there is no law requiring examination, or else it is so loosely applied by the municipal authorities that it fails of its purpose; even when applied with ordinary diligence and intelligence it does not reach clandestine prostitution nor the many women living in a state of concubinage. It has been proposed to apply the remedy inside instead of outside, and subject all enlisted men to a weekly examination, those found diseased being placed under treatment and debarred from post-exchange and pass privileges. There is no question as to the excellent results of this plan wherever put into practice, but the objections against it are so strong that it never extended beyond a few posts, and the wisdom and practicability



VENEREAL WARD, POST HOSPITAL, MORRO CASTLE, SANTIAGO.



of enforcing it as a general rule is very doubtful. The ratio of alcoholism is likewise high, at least double that of the United States. This is, in a large measure, attributable to the cheap and wretched alcoholic beverages sold in all parts of the island, especially since the prohibition to sell intoxicating drinks in post-exchanges.

It is also interesting to compare the western half of the island, comprising four provinces, with the eastern half comprising the provinces of Santiago and Puerto Príncipe. In the western half, the mean strength of the command is 3344 and the percentage of admissions only 150, *which is less than in the United States*. In the eastern half, on the contrary, with mean strength of 1772, the percentage of admissions is 274, not only more than in the United States but greater than for all the islands. The difference depends mostly upon the much greater number of cases of diarrhoeal diseases and malarial fever, so that, after making due allowance for the personal equitation of medical officers and the smaller size of posts, it is safe to conclude, leaving yellow fever out of consideration, that the eastern half of the island does not enjoy as good hygienic and climatic conditions as the western half; thus, five deaths from malarial fever occurred in the province of Santiago and none in any of the other provinces. In my report for the fiscal year ending June 30, 1900, it was also shown that malarial fever gradually increased in frequency and severity from the western to the eastern end of the island.

The ratio of deaths per 1000 is 13.6 for western and 10.1 for eastern Cuba, a difference due to the 24 cases of yellow fever occurring in the western provinces; if we deduct these, the ratio of deaths will be less for the western than for the eastern provinces.

With the acquisition of our recent knowledge of the propagation of malarial fever it may be taken for granted that this preventable disease will be hereafter greatly reduced and, at most posts, practically eliminated. As an instance: For the week ending June 23, 1900, there were 34 cases of malarial fever under treatment at Rowell Barracks (Cienfuegos); a year afterward, for the week ending June 22, 1901, chiefly in consequence of sanitary measures promoted by the post surgeon, Lieut. A. E. Truby, there was not a single case.

YELLOW FEVER.

In my report for the fiscal year ending June, 1900, I described three outbreaks of yellow fever outside of Havana, involving American troops: at Santiago de Cuba, Santa Clara and Quemados. That of Santiago ended in October, 1899, and, thanks to the energetic measures carried out by the chief surgeon, Major L. C. Carr, not a single case has occurred since then in that city (troops and civilian population), although previously strongly contaminated. The other two outbreaks came to an end in July, 1900. In June, July and August, 1900, thirty cases occurred at Pinar del Rio Barracks, with nine deaths; the first few cases were unrecognized by the surgeon and the infection allowed to spread before proper measures of isolation were taken. Five sporadic cases occurred at Hamilton Barracks between August and November, but none was permitted to become a focus of infection. The last cases recorded among enlisted men are the nine who were experimentally inoculated by infected mosquitoes at Quemados in December, January and February, without a single death. Since then all our posts have been absolutely free from yellow fever.

In the summer of 1900, on the recommendation of the Surgeon General, a board of medical officers consisting of Surgeon Walter Reed, U. S. A., and Contract Surgeons Carroll, Agramonte and Lazear, U. S. A., was convened in Havana for the investigation of tropical diseases. The result of its experiments, as already well known, was one of the most brilliant medical discoveries of the age, namely the mode of transmission of yellow fever, and, as a natural consequence, a complete revolution in the methods adopted to prevent and combat this disease. The doctrine of the transmission of yellow fever by the bite of mosquitoes having been proved by incontrovertible experiments upon non-immunes, and fomites proved to be harmless, the following circular, having received the sanction of the Surgeon General, was published:

CIRCULAR, }
No. 5. }

HEADQUARTERS DEPARTMENT OF CUBA,
Havana, April 27, 1901.

Upon the recommendation of the Chief Surgeon of the Department, the following instructions are published and will be strictly enforced at all military posts in this Department:



GENERAL WARD, POST HOSPITAL, MORRO CASTLE, SANTIAGO.



The recent experiments made in Havana by the Medical Department of the Army having proved that yellow fever, like malarial fever, is conveyed chiefly, and probably exclusively, by the bite of infected mosquitoes, important changes in the measures used for the prevention and treatment of this disease have become necessary.

1. In order to prevent the breeding of mosquitoes and protect officers and men against their bites, the provisions of General Orders No. 6, Department of Cuba, December 21, 1900, shall be carefully carried out, especially during the summer and fall.

2. So far as yellow fever is concerned, infection of a room or building simply means that it contains infected mosquitoes, that is, mosquitoes which have fed on yellow fever patients. Disinfection, therefore, means the employment of measures aimed at the destruction of these mosquitoes. The most effective of these measures is fumigation, either with sulphur, formaldehyde or insect powder. The fumes of sulphur are the quickest and most effective insecticide but are otherwise objectionable. Formaldehyde gas is quite effective if the infected rooms are kept closed and sealed for two or three hours. The smoke of insect powder has also been proved very useful; it readily stupefies mosquitoes, which drop to the floor and can then be easily destroyed.

The washing of walls, floors, ceilings and furniture with disinfectants is unnecessary.

3. As it has been demonstrated that yellow fever cannot be conveyed by fomites, such as bedding, clothing, effects and baggage, they need not be subjected to any special disinfection. Care should be taken, however, not to remove them from the infected rooms until after formaldehyde fumigation, so that they may not harbor infected mosquitoes.

Medical officers taking care of yellow fever patients need not be isolated; they can attend other patients and associate with non-immunes with perfect safety to the garrison. Nurses and attendants taking care of yellow fever patients shall remain isolated, so as to avoid any possible danger of their conveying mosquitoes from patients to non immunes.

4. The infection of mosquitoes is most likely to occur during the first two or three days of the disease. Ambulant cases, that is, patients not ill enough to take to their beds and remaining unsuspected and unprotected, are probably those most responsible for the spread of the disease. It is therefore essential that all fever cases should be at once isolated and so protected that no mosquitoes can possibly get access to them until the nature of the fever is positively determined.

Each post shall have a "reception ward" for the admission of all fever cases and an "isolation ward" for the treatment of cases which prove to be yellow fever. Each ward shall be made mosquito-proof by wire netting over doors and windows, a ceiling of wire netting at a height of seven feet above the floor, and mosquito bars over the beds. There should be no place in it where mosquitoes can seek refuge, not readily accessible to the nurse. Both wards can be in the same building, provided they are separated by a mosquito-tight partition.

5. All persons coming from an infected locality to a post shall be kept under careful observation until the completion of five days from the time of possible infection, either in a special detention

camp or in their own quarters; in either case, their temperature should be taken twice a day during this period of observation so that those who develop yellow fever may be placed under treatment at the very inception of the disease.

6. Malarial fever, like yellow fever, is communicated by mosquito bites and therefore is just as much of an infectious disease and requires the same measures of protection against mosquitoes. On the assumption that mosquitoes remain in the vicinity of their breeding places, or never travel far, the prevalence of malarial fever at a post would indicate want of proper care and diligence on the part of the Surgeon and Commanding Officer in complying with General Orders No. 6, Department of Cuba, 1900.

7. Surgeons are again reminded of the absolute necessity, in all fever cases, to keep, from the very beginning, a complete chart of pulse and temperature, since such a chart is their best guide to a correct diagnosis and the proper treatment.

BY COMMAND OF MAJOR GENERAL WOOD:

H. L. SCOTT,

Adjutant General.

HYGIENE OF POSTS.

All enlisted men are in comfortable, permanent barracks, with one exception: the cavalry troops at Camp Mackenzie, Puerto Príncipe, are still under canvas, but with the benefit of every improvement that a camp admits of. Five of our largest posts have been built on new selected sites since the American intervention, and combine as many favorable hygienic conditions as possible: the others occupy old Spanish quarters more or less extended and renovated and answering their purpose very well. The disposal of garbage and refuse is simple and effective: most of our posts, being near the shore, dump everything into the sea; none has a crematory. All the posts built on new sites (Columbia Brks., Hamilton Brks., Rowell Brks., Cabaña Brks., Morro Castle Brks., Santiago) are provided with modern sewerage with outlet into the sea. At other posts, the milk of lime and excavator system is successfully employed, while a few still use the old fashioned latrines.

The clothing is, in the main, well adapted to the climate, with the exception of the campaign hat: this should have an all-round space outside the sweat-band for ventilation and, if possible, be made of rain-proof material. Since the helmet is impossible in the field, it seems neces-



POST HOSPITAL U. S. A., ROWELL BARRACKS (SANTA CLARA).



sary to perfect the campaign hat until entirely satisfactory. The criticism commonly heard against the field uniform, and in which I concur, is its homely simplicity, its lack of military neatness and smartness; for instance, the combination of khaki trousers and blue shirt is not effective from a military point of view, and the efficiency of many men is impaired by their inability to use suspenders. I believe the soldier should always wear an outside garment, let it be ever so thin, whether or not he wears any undershirt; this arrangement has also sanitary advantages well pointed out by Captain M. F. Steele.

The food is generally satisfactory and it would be difficult to provide for it better than by existing regulations. Very few complaints have appeared in sanitary reports. It is true, nevertheless, that in Cuba, good, palatable fruits are neither common nor cheap, that specially those to which North Americans are accustomed, and most fond of, are very rare and sadly missed, and that vegetables are seldom plentiful. These deficiencies, however, concern the luxuries rather than the necessities of the soldier's life. The vexed question of the quantity of meat which should be consumed by the soldier in this climate to maintain his most effective health seems to have been practically solved by common experience. It may be doubtful whether North Americans eat as much in Cuba as in the United States, but the proportion of meat to the whole quantity of food consumed is fully as great here as in colder regions. At Columbia Barracks, our largest and most important post, with a garrison 1300 strong, fish (canned salmon) is only drawn once a month in lieu of meat; at the other posts in the immediate vicinity of Havana, no fish is drawn at all. It is further found that at Columbia Barracks, at least 93 per cent.

89 as beef, $2\frac{1}{2}$ as pork and $1\frac{1}{2}$ as chicken of the meat allowance is consumed, the remaining 7 per cent. being traded off for eggs, butterine and post-exchange articles. With this diet, the number of admissions for diarrhoea at that post during the past year was 9.42 per cent., as against 9.54 per cent. for troops stationed in the United States.

Particular care has been given to the building, repair and equipment of post hospitals so as to give sick soldiers all the advantages of modern treatment with the best hygienic surroundings. These hospitals are more or less on the pavilion system, consisting of frame buildings

with very free ventilation, double roofs and wide porches, the wards rather large so as to secure unrestricted air movement. None of the old Spanish stone hospitals are now in use for soldiers, except at Holguín. It has been demonstrated that all classes of surgical operations can be performed in Cuba with at least the same chances of success as in the United States. There is no longer any general hospital in the Department, having been found unnecessary after conditions had settled to those of normal and peaceful times. Every post takes care of its own sick and wounded, with the exception that, in case of major operations, surgeons who do not possess the necessary qualifications send their patients to Columbia Barracks or to Morro Castle (Santiago) for treatment at the hands of skilled operators. At Columbia Barracks, Major A. N. Stark, and at Morro Castle, Major L. C. Carr and Lieutenant I. A. Shimer, have done very successful surgical work for which they are entitled to much credit.

MOVEMENTS OF TROOPS AND MEDICAL OFFICERS.

On July 1, 1900, the then Division of Cuba consisted of three departments: Department of Havana and Pinar del Río, Major J. R. Kean, Surgeon, U. S. A., Chief Surgeon; Department of Matanzas and Santa Clara, Major F. J. Ives, Surgeon, U. S. A., Chief Surgeon; Department of Santiago and Puerto Príncipe, Major L. C. Carr, Surgeon, U. S. V., Chief Surgeon. By General Orders No. 98, A. G. O., July 23, 1900, these three departments were reduced to two, namely, Department of Western Cuba (including the four western provinces), under General Fitzhugh Lee, Major J. R. Kean, Chief Surgeon; and Department of Eastern Cuba (including the two eastern provinces) under General Samuel M. Whitside, U. S. V., Major L. C. Carr, Chief Surgeon, succeeded during leave of absence by 1st Lieutenant Ira A. Shimer, Assistant Surgeon, U. S. A.

On November 15, 1900, the Departments of Eastern and Western Cuba were discontinued, and the Division reduced to the Department of Cuba. However, on account of the remoteness of certain posts in the eastern part of the island the province of Santiago was organized into a district under General Samuel M. Whitside, U. S. V., with complete district staff, 1st Lieutenant Shimer,



POST HOSPITAL, U. S. A., CABAÑA BARRACKS, (HAVANA).

Chief Surgeon, succeeded, on his return from leave, by Major L. C. Carr. This consolidation and the departure of two regiments of infantry was followed by the abandonment of eleven garrisoned posts, the surplus medical officers and hospital corps men accompanying the troops to the United States or being otherwise disposed of.

There are now in the Department fourteen garrisoned posts, all with one or more medical officers, and one subpost, Baracoa, in charge of an Acting Hospital Steward (graduate of medical college). There are, besides, one supply depot at Havana, and one infectious disease hospital at Santiago de Cuba, the latter to be turned over to the municipality as soon as possible.

The medical officers on duty in the Department on June 30th are as follows:

U. S. Army:

Surgeons with rank of Major.....	4
Asst. Surgeons with rank of Captain....	1
Asst. Surgeons with rank of Lieutenant.....	5

U. S. Volunteer Army:

Surgeons with rank of Major....	2
Asst. Surgeons with rank of Captain.	8
CONTRACT SURGEONS.....	13
DENTAL SURGEONS.....	1
Total.....	34

Of the above medical officers, Major W. C. Gorgas is on special duty as chief sanitary officer of Havana, Major J. R. Kean as superintendent of the Department of Charities, and Lieut. I. A. Shimer as sanitary inspector of the city of Santiago. With these exceptions all are on military duty.

In addition to their proper military duties, most medical officers are also necessarily more or less concerned in the sanitation of towns, especially garrison towns; thus, to prevent the infection of troops, on April 17th, 1901, the following circular was published:

HEADQUARTERS DEPARTMENT OF CUBA,

*Havana, Cuba, April 17, 1901.**The Commanding Officer,*

SIR:

The Department Commander directs that the surgeon stationed at your post shall act as Medical Inspector of the town of He shall advise the Commanding Officer on all matters in said town which are liable to involve the health of the troops. His chief duties as Medical Inspector shall be:

1. To keep himself informed of the sanitary condition of the town and to make such especial investigations and recommendations as he may deem necessary

2. To inspect all hospitals in which fever cases are admitted, in order to ascertain the nature and number of these cases, and whether the provisions of Circular Letter of March 5th, issued by the Superintendent of Charities, by order of the Military Governor, are being complied with.

3. To investigate the prevalence of mosquitoes, their species, the extent to which they produce malarial and yellow fever infection, the measures adopted to prevent their propagation, and the success thereof.

4. To ascertain what regulations (if any) are enforced regarding the examination of prostitutes, and their isolation and treatment when diseased.

On the last day of each month (or oftener if necessary), he will report to the Chief Surgeon of the Department, through the Post Commander, the cases of infectious diseases which occurred during the month in the town, the general result of his inspections and investigations, and all other sanitary matters whereby the health of the troops may be affected.

A copy of this communication has been furnished the Mayor of, with a letter which, it is hoped, will secure his full co-operation in the matter.

Very respectfully.

(Signed) H. L. SCOTT,

Adjutant General.

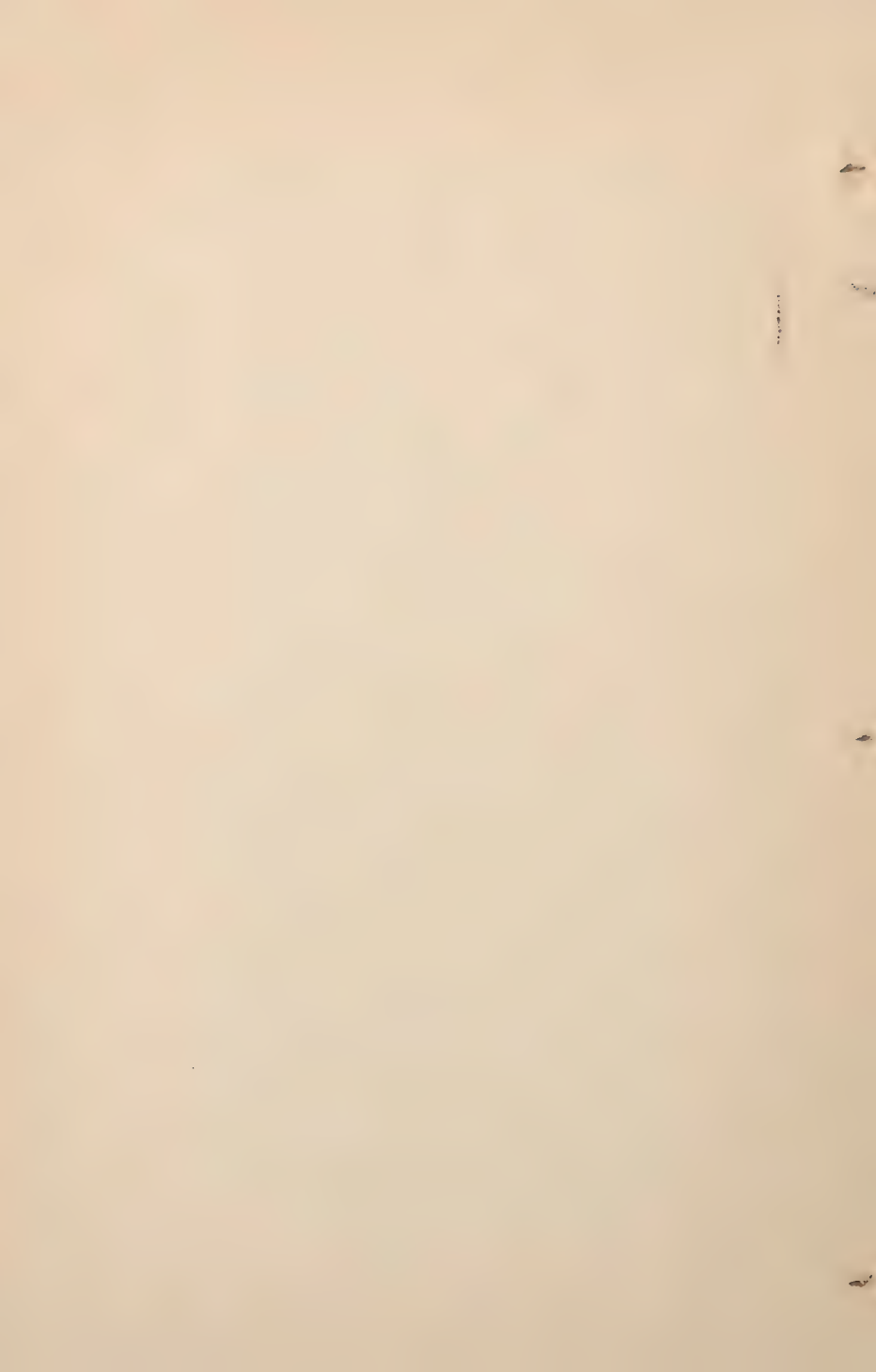
The hospital corps consists of:

Hospital Stewards.	11
Acting Hospital Stewards ...	17
Privates.....	144

The number of non-commissioned officers is somewhat short of requirements, while that of the privates is slightly in excess of the official allowance; a few of the latter are now being examined for detail as acting stewards. So far as practicable, a hospital corps school has been organized



WARDS AND OPERATING ROOM, POST HOSPITAL, U. S. A., COLUMBIA BARRACKS (HAVANA).



and maintained at Columbia Barracks, where all corps men ignorant of their duties are sent for training and instruction.

There are also, at present, eight female nurses on duty in the Department, namely, four at Columbia Barracks, two at Cabaña Barracks and two at Hamilton Barracks. These nurses are all women of character, who perform their duties diligently and efficiently. Despite the wisest regulations, female nurses will be now and then, perhaps without any fault of theirs, a troublesome and demoralizing factor at posts, and I believe it will be in the interest of the service to employ them only at large, important hospitals, and never less than two, or still better three or four, together.

HAVANA.

The work of sanitation in the city of Havana has been prosecuted with undiminished vigor under the able direction of Major W. C. Gorgas, U. S. A., and with the same gratifying results, as shown by the appended table. The death rate (24.26) has changed but little during the past six months, indicating slight but continued improvement. Those diseases propagated by mosquitoes, namely, yellow fever and malarial fever, have been very much reduced, while those resulting from defective drainage, absence of sewers and bad general hygiene, show no reduction, the number of cases of enteritis, on the contrary, having much increased. It is to be lamented that the great work of sewerage and paving, without which the complete sanitary regeneration of Havana is impossible, has not yet been begun; but there is good reason to believe that this much needed and inevitable improvement will not be postponed much longer. The diseases which, in Havana, would be more especially benefited by sewerage are tuberculosis, enteritis and typhoid fever. The mortality of tuberculosis fell from 1,307 in 1899, to 854 in 1900; during the same period, that of enteritis fell from 1,163 to 560 and that of typhoid fever from 240 to 90; but from present indications, it would seem that, under existing conditions, the climax of practicable improvement has about been reached and that the above figures will not be much further reduced until the city is well sewered and the vicious crowding in tenement houses has been remedied. The discovery that mosquitoes

breed abundantly in cesspools has also convinced us that there can be little hope of stamping out yellow fever and malarial fever until these cesspools have been replaced by modern sewerage.

The well planned and relentless war carried on against mosquitoes has been productive of remarkable results. Thus, during the first six months of 1900, the mortality from malarial fever was 247; during the last six months, 97, and during the first six months of 1901, only 75. The record for yellow fever is equally interesting: During the first six months of 1900 there were 24 deaths; on account of the unprecedentedly large immigration and consequent increase of non-immunes the mortality rose to 286 during the last six months, a mortality, however, whose ratio to the number of non-immunes is much lower than ever before in the history of Cuba. It was only during the last winter that the machinery of the sanitary department became fully adjusted to its new purpose, the destruction of mosquitoes and protection of patients from their bites; and the sequence, if we may not surely say the consequence, is as follows: January, 9 deaths; February, 6; March, 2; April, May and June, none. It is not reasonable to suppose that all infected mosquitoes have been destroyed and that no more yellow fever is to be expected in Havana; this deduction is especially unwarrantable in view of the fact, already noted, that so many of these insects breed in cesspools, out of reach, but it seems logical to infer that a large proportion of infected mosquitoes have been killed or rendered harmless; that, hereafter, cases of yellow fever will be much fewer than in the past, in spite of the fact that non-immune immigrants are greatly increasing every month, and that, after the construction of sewers, the complete stamping out of the infection will be quickly and easily accomplished.

OBLIGATORY VACCINATION.

Small-pox being a constant and increasing danger in Cuba, a commission was appointed, of which the Chief Surgeon was president, to study the subject and propose a remedy. Upon its recommendation, Civil Orders No. 165 of June 24, 1901, was issued, making vaccination and revaccination obligatory in Cuba, and establishing a central vaccine institute in Havana, with complete modern



Frame of wire cage, with vestibule, used
all patients to protect fever patients from mosquitoes



equipment, for the production of the virus needed for the whole island.

IMMIGRATION STATION.

After the close of the Spanish-American war, immigration, which had stopped since 1895, was actively resumed and on a larger scale than ever; during the year 1899, 16,260 immigrants arrived in Havana; in 1900, 24,124; and during the first six months of 1901, 7,450. As these immigrants furnish the great majority of non-immunes from which yellow fever is fed, it was deemed necessary to take especial precautions to prevent their infection. All non-immune immigrants, on their arrival, are taken to a detention station, on the healthiest site around the bay, where they await in comfort and safety offers of employment. Earnest efforts are made to send as many as possible to the rural districts. "In this way all are benefited: the immigrant, who procures work without hardship or danger, the city of Havana, which is ridden of dangerous non-immune agglomerations, and employers, who are enabled to get all the hands they require with the least trouble and expense."

Very respectfully,

V. HAVARD,

Major, Surgeon, U. S. Army,

Chief Surgeon.

WESTERN CUBA.
COMPRISING THE PROVINCES OF PINAR DEL RIO, HAVANA, MATANZAS AND SANTA CLARA.
PERCENTAGE OF ADMISSIONS.

	Malaria.	Intermittent.	Malarial fevers.	Yellow fever.	Typhoid fever.	Tuberculosis.	Other infectious diseases.	Syphilis.	Other venereal diseases.	Mental diseases.	All other diseases.	Total.
July.....	1.73	1.19	4.33	1.25	6.06	0.12	0.36	0.36	1.19	0.20	6.96	17.75
August.....	0.77	0.38	4.54	0.18	0.17	0.06	0.36	0.21	1.13	0.23	7.44	16.77
September.....	0.38	0.38	3.73	0.18	0.93	0.06	0.06	0.15	1.61	0.12	7.62	14.62
October.....	0.89	0.32	2.96	0.22	0.03	0.03	0.03	0.18	1.61	0.29	8.04	14.60
November.....	0.35	0.03	2.51	0.17	.....	.....	0.14	0.33	1.34	0.12	6.66	11.65
December.....	0.20	0.03	1.85	0.03	.....	.....	0.03	0.24	1.67	0.26	6.57	10.88
January.....	0.41	0.18	1.70	0.20	0.06	0.06	0.03	0.12	1.10	0.38	5.92	10.16
February.....	0.35	.....	1.16	0.11	.....	0.03	0.09	0.09	1.13	0.15	4.60	7.71
March.....	0.60	0.18	0.86	.....	.....	.....	0.72	0.09	1.85	0.35	6.60	11.25
April.....	0.92	0.06	0.80	0.03	0.14	0.06	0.09	0.18	1.46	0.26	6.75	10.75
May.....	0.83	0.06	1.19	.....	.....	0.03	0.03	0.24	2.15	0.32	7.92	12.77
June.....	1.76	0.18	1.37	.....	0.03	.....	.....	0.18	1.07	0.20	7.50	12.29
	9.19	2.99	27.00	2.97	0.52	0.45	1.94	2.37	17.31	2.88	82.58	150.20

NUMBER OF DEATHS

Yellow fever.....	24
Typhoid fever.....	3
Malarial fever.....	4
Dysentery.....	.....
Tuberculosis.....	.....
Heart diseases.....	4
Suicide.....	2
Homicide.....	.....
Accidental.....	6
Miscellaneous.....	6
	49

Mean strength of command..... 3,344
(for admissions)
Total percentage of admissions... 150
Mean strength of command..... 3,594
(for deaths)
Percentage of deaths..... 1.36



MAIN WARD, POST HOSPITAL, U. S. A., SAN LUIS (SANTIAGO), CUBA.



EASTERN CUBA. COMPRISING THE PROVINCES OF SANTIAGO AND PUERTO PRINCIPLE. PERCENTAGE OF ADMISSIONS.

	Parthen.	Psych.	Mental Drops.	Yellow fever.	Typhoid fever.	Tubercu- losis.	Other fevers.	Alcoholism.	Mis- admission.	TOTAL.
July.....	3.38	0.34	11.39	.....	0.12	.....	0.05	0.46	14.67	33.40
August.....	2.98	0.22	9.59	.....	.....	.....	0.05	0.28	11.92	26.87
September.....	1.46	0.22	8.12	.....	.....	0.05	.....	0.16	8.91	20.44
October.....	1.96	.....	9.76	.....	.....	.....	.....	0.39	9.93	23.60
November.....	1.21	0.28	14.39	.....	.....	0.05	.....	0.56	0.12	29.10
December.....	0.73	.....	9.42	.....	.....	0.05	0.11	0.16	8.23	21.23
January.....	1.06	0.11	6.70	.....	.....	.....	0.11	0.28	10.94	21.90
February.....	0.50	0.05	4.17	.....	.....	.....	.....	0.11	9.76	17.08
March.....	1.29	0.16	3.66	.....	.....	0.11	0.67	0.33	1.95	10.92
April.....	2.48	0.16	3.44	.....	.....	0.05	0.05	0.33	11.73	21.50
May.....	2.31	0.05	3.61	.....	.....	0.05	0.28	0.45	16.65	25.48
June.....	1.96	0.22	3.55	.....	.....	0.11	0.16	0.39	15.51	23.47
	21.35	1.81	87.80	.....	0.12	0.47	1.48	3.90	127.85	274.09

NUMBER OF DEATHS.

Yellow fever.....	.....
Typhoid fever.....	2
Malarial fever.....	5
Dysentery.....	.....
Tuberculosis.....	1
Heart Diseases.....	.....
Snake.....	1
Homicide.....	3
Accidental.....	3
Miscellaneous.....	3
	18

Mean strength of command. 1772
Percentage of deaths..... 1.01

DEPARTMENT OF CUBA. PERCENTAGE OF ADMISSIONS.

	Typhoid.	Paratyph.	Malarial fevers.	Yellow fever.	Typhoid fever.	Tuberculosis.	Chronic affections.	Syphilis.	Other venery.	Mentalism.	All other diseases.	TOTAL.
July.....	2.30	0.89	6.58	1.25	0.97	0.07	0.25	0.27	1.77	0.33	9.63	23.41
August.....	1.54	0.33	6.29	0.48	0.11	0.03	0.25	0.15	1.46	0.25	4.96	15.85
September.....	0.76	0.33	5.25	0.48	0.02	0.05	0.03	0.19	1.48	0.13	8.07	16.79
October.....	1.27	0.21	5.31	0.22	0.02	0.02	0.02	0.23	1.68	0.33	8.50	17.81
November.....	0.66	0.11	6.62	0.17	.....	0.02	0.09	0.25	1.93	0.27	7.62	17.74
December.....	0.38	0.02	4.28	0.04	.....	0.02	0.05	0.25	1.87	0.23	7.15	14.28
January.....	0.64	0.15	3.44	0.20	0.04	0.05	0.05	0.19	1.54	0.19	7.66	14.15
February.....	0.41	0.02	2.20	0.11	.....	0.02	0.05	0.21	1.56	0.13	6.39	11.10
March.....	0.81	0.17	1.83	.....	.....	0.05	0.70	0.29	1.93	0.35	7.95	14.11
April.....	1.46	0.09	1.32	0.03	0.09	0.05	0.07	0.29	1.85	0.29	8.48	14.02
May.....	1.35	0.05	2.13	.....	.....	0.03	0.11	0.23	2.05	0.37	10.94	17.26
June.....	1.83	0.19	2.11	.....	0.02	0.03	0.05	0.17	1.19	0.27	10.30	16.16
	13.44	2.56	47.36	2.97	0.37	0.44	1.72	2.72	20.31	3.14	97.65	192.68

NUMBER OF DEATHS.

Yellow fever.....	24
Typhoid fever.....	5
Malarial fever.....	5
Dysentery.....	4
Tuberculosis.....	1
Heart diseases.....	4
Suicide.....	3
Homicide.....	3
Accidental.....	9
Miscellaneous.....	9
	57

Mean strength of command, 5116

Percentage of deaths..... 1.25



MEDICAL OFFICERS' QUARTERS, POST HOSPITAL, U. S. A., COLUMBIA BARRACKS, (HAVANA).



CITY OF HAVANA. MORTALITY FROM PRINCIPAL DISEASES.

	YELLOW FEVER.	MALARIAL FEVER.	TUBERCULOSIS.	ENTERIS.	TYPHOID.	TOTAL DEATH RATE.
July 1900	31	13	61	53	13	25.68
August "	49	14	65	42	9	27.60
September "	53	12	72	43	7	25.68
October "	74	25	73	38	5	25.08
November "	58	15	58	33	9	21.31
December "	21	18	68	40	4	23.28
January 1901	9	12	96	56	3	22.74
February "	6	15	62	52	1	19.32
March "	2	10	78	122	10	26.28
April " .....	.....	11	86	143	10	26.64
May " .....	.....	17	69	137	16	24.27
June " .....	.....	16	55	154	15	23.28
Total	303	172	843	913	102	24.26 ^{per 1000}
Calendar Year 1900.....	310	344	851	560	90	24.40

RATIO OF ADMISSIONS
TO SICK REPORT PER 1000 OF STRENGTH,
FOR ALL THE POSTS IN CUBA.

POSTS	TOTAL ADMISSIONS.	MEAN STRENGTH.	RATIO OF ADMISSIONS PER 100.
COLUMBIA BARRACKS	1434	1316	1089
Rowell Barracks	538	397	1355
Cabaña Barracks.....	425	278	1528
Hamilton Barracks.....	1695	891	1902
Department and Artillery } Headquarters, Havana }	895	462	1939
Bayamo	177	91	1945
Holguín Barracks	955	373	2560
Ciego de Avila.....	252	96	2625
Camp Mackenzie.....	1058	397	2791
Morro Castle	1032	334	3089
Guantánamo.....	287	91	3153
San Luis.....	300	90	3333
Manzanillo.....	1067	317	3365

V. HAVARD,

Major and Surgeon U. S. A.

Chief Surgeon.

TABLE OF COMPARATIVE
HEALTH STATISTICS BETWEEN TROOPS IN THE
UNITED STATES AND IN CUBA.

(The figures for the United States are for the year ending Dec. 31, 1900, and were received after the report was printed.)

	Total Strength of Command.	Total Admissions.	Total Deaths.	Ratio of admissions per 1000 of Strength.	Ratio of deaths per 1000 of Strength.
United States, Year ending Dec. 31, 1900...	20690	31262	161	1511	7.78
Cuba, Year ending June 30, 1901.....	5116	9863	67	1927	12.50

(The ratio of deaths for Cuba is computed from strength of command of 5366.)

If we deduct the number of yellow fever cases (24) from the total mortality in Cuba we obtain the ratio of 8.01, practically that of the United States.

Malarial fever in Cuba constitutes about one fourth of all admissions; as it is to a great extent a preventable disease and every possible measure has been taken to remove its cause, a reduction of at least one half in the ratio of admissions for this disease is expected on the next report.

